

MEMORANDUM FOR: Ajit Singh  
NGS Project Coordinator

Jim Waters  
State Project Coordinator

FROM: Charles W. Challstrom  
Director, National Geodetic Survey

SUBJECT: PROJECT INSTRUCTIONS:  
Tennessee Federal Base Network Survey

The Tennessee Department of Transportation's willingness to lead the observation portion of the [Tennessee Federal Base Network \(FBN\) survey](#) is gratefully acknowledged. These voluntary contributions of state and local resources allow for the timely completion of the nationwide FBN network, provide opportunities for the transfer of survey technologies, and tailor the network to meet local needs.

To accomplish this task, please proceed in accordance with "[Standing Instructions: State-Sponsored FBN Surveys](#)" dated December 21, 2001. Utilize the following project identifiers as appropriate:

Title:	TENNESSEE FBN, 2003
Accession number:	GPS-1753
Task Number:	8K6D2000 (FBN)

It is not required to collect meteorological data. However, collection of met data is encouraged if appropriate meteorological instruments are readily available; NGS does not recommend buying meteorological instruments solely for this purpose. The data may be useful during the analysis phase, particularly when atmospheric conditions are abnormal or highly variant. It may be possible to avoid reobservations through re-processing with observed meteorological data.

A proposed station list, map, observation schedule, and list of project deliverables are attached.

Attachment

N/NGS21:JGEvjen:713-3194:amg:3-27-03  
C:\MYFILES\INSTRUCTIONS\TN-GPS1753.03-03-27

### STATE DELIVERABLES

STATE PROJECT COORDINATOR = Jim Waters, P.E., R.L.S., Civil Engineering Manager  
Tennessee Department of Transportation, 1300 James K. Polk Building, Nashville, TN 37243-0348  
Telephone: 615-532-3135, Email: [Jim.Waters@state.tn.us](mailto:Jim.Waters@state.tn.us)

FILE TYPE	SOFTWARE	FILE NAME	DESCRIPTION	STATUS
R-files (raw GPS data)	receiver software receiver or <a href="#">TEQC</a>	4444DDDS.XXX 4444DDDS.03n,4444DDDS.03o	Raw GPS observables in receiver-dependent format. Convert files to Receiver-INdependent EXchange (RINEX) format.	
Survey Forms	For each station: may include <a href="#">GPS observation logs</a> , <a href="#">pencil rubbings</a> , <a href="#">description log</a> , <a href="#">visibility diagram</a> , as necessary.			
Photographs	Photos & formats described in " <a href="#">Requirements for Digital Photographs of Survey Marks &amp; CORS Antennas</a> "			
Field Project Report	A <a href="#">sample report</a> format is available.			

Detailed descriptions of project deliverables can be found in the [FGCS Bluebook Annex L](#)

### NGS DELIVERABLES

NGS PROJECT COORDINATOR = Ajit Singh, National Geodetic Survey  
N/NGS4, SSMC3-8517, 1315 East-West Highway, Silver Spring, MD 20910-3282  
Telephone: 301-713-3182/Ext. 109, Fax: 301-713-4327, Email: [Ajit.Singh@noaa.gov](mailto:Ajit.Singh@noaa.gov)

FILE TYPE	SOFTWARE	FILE NAME	DESCRIPTION	STATUS
GPS precise orbit files	<a href="#">IGS website</a>	igsWWWWD.sp3	Precise ephemerides for GPS satellites in SP3 format.	
A-file (adjust configuration)	<a href="#">QQRECORD</a> v.1.4	TN_FBN.af1	Modify A-file by adding QQ records from G-file.	
B-file (observation metadata)	<a href="#">CR8BB</a> v.5.5.2 <a href="#">GEOID99</a>	TN_FBN.bf1	Input observation data from observation logs. Add modeled geoid heights.	
D-file (station descriptions)	<a href="#">WDDPROC</a> v.4.xx	TN_FBN.dsc	Input station data from description logs.	
G-file (computed baselines)	<a href="#">PAGES</a> v.2002.01.28	TN_FBN.gf1	Compute baselines from RINEX2 GPS data and orbit files.	
Free adjustment Constrained adjustment	<a href="#">ADJUST</a> v.4.26	TN_FBN.free.adjust TN_FBN.cors.adjust	Compute ITRF positions from A-file, B-file, & G-file. Constrain ellipsoidal heights and CORS positions. Include UNIX "plotres_prompt.bsh" plots.	
Various DQA program outputs	includes <a href="#">COMPGB</a> , OBSDES, NEWCHKOB, OBSCHK, <a href="#">WCHKDESC</a> , etc. Explain any error messages encountered.			
Final Project Report	miscellaneous	TN_FBN.wpd	See <a href="#">FGCS Bluebook Annex K</a> for details.	